The claims remaining in the application are 23-40 and 43-46.

REMARKS

The Applicants would like to thank the previous Examiner for the courteous and quick Office Action.

Election/Restrictions

The Examiner has required restriction to one of the following groups of claims:

I - Claims 23-32 drawn to corrosion resistant brines, classified in class 252, subclass 387;

II - Claims 33-40 and 43-46 drawn to methods of making corrosion resistant brines classified in class 252, subclass 397; and

III - Claims 41-42 drawn to methods of using corrosion resistant brines classified in class 166, subclass 242.4.

The Examiner contends that the claims of Groups I and III are related as a product and process of use. The Examiner contends that the inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. In the instant case, the Examiner alleges that the product as claimed can be used as a treatment of psoriasis of the skin. The Examiner further notes that the process of use claims also read on brine compositions that are outside the scope of the product claims of Group I since the product of use claims do not specify the density range.

The Examiner further contends that the claims of Groups II and I are related as a process of making and product made. The inventions are alleged to be distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different products or (2) that the product as claimed can be made by another and materially different process. In the instant case, the Examiner supposes that the product as claimed can be made by adding water-soluble carbonate to an aqueous solution containing zinc cations in which some precipitate is formed as long as there is a subsequent filtration step to get the final brine solution. The Examiner again further notes

that the process of making claims also read on making brine compositions that are outside the scope of the product claims of Group I since the product of making claims do not require the same density range.

The Examiner further contends that the claims of Group II and Group III are patentably distinct since the subject matter of Group II claims are directed to a process of making a brine solution in a method of pumping the brine downhole in a hydrocarbon recovery process.

The Examiner contends that because these inventions are allegedly distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is allegedly proper.

In a telephone interview on August 19, 2004, the undersigned made the provisional election with traverse to prosecute the invention of Group I, claims 23-32. Affirmation of this election is being made by applicant. The Examiner's attention is directed to the fact that claims 41 and 42 of Group III have been canceled without prejudice to Applicant's right to present such claims in a continuing application at a later date. Claims 33-40 and 43-46 have been withdrawn but remain in the application.

Applicant respectfully traverses the restriction requirement as not complying with the statutory law in this area. Specifically, the Examiner has made no showing that the two sets of claims are "independent *and* distinct." The law states, in 37 CFR §1.142, that:

> "(a) If two or more *independent and* distinct inventions are claimed in a single application, the examiner in an Office action will require the applicant in the reply to that action to elect an invention to which the claims will be restricted, this official action being called a requirement for restriction ... " (Emphasis added.)

While there is some difference in the way this statute is interpreted in the MPEP, it should be noted that:

> "The MPEP ... is entitled to notice so far as it is an official interpretation of the statutes or regulations *with which it is not in conflict.*" See *Litton Systems, Inc. v. Whirlpool Corp.*, 221 U.S.P.Q. 97, 107 (Fed. Cir. 1984). (Emphasis added.)

As the MPEP is in *direct* conflict with the law on this point, it is not entitled to any weight on the matter. The Examiner only argues distinctness in the rejection.

The alleged distinct inventions herein have not been shown to be *independent* as required by 37 CFR §1.142. In fact, the corrosion resistant brine fluids of claims 23-32 are made by the methods described in claims 33-40 and 43-46, and the only expected products and compositions from the methods recited in claims 33-40 and 43-46 are the corrosion resistant brine fluids of claims 23-32. Thus, these claims are not independent from each other, it is respectfully submitted. Claim 33 has been amended herein to recite the density range of claims 23 and 32.

Further, the Examiner's argument that the product as claimed in Group I can be made by adding a water-soluble carbonate to an aqueous solution containing zinc cations not caring that a precipitate is formed and then subsequently filtering to get the final brine solution is respectfully traversed as not based on the proper facts. It is not possible for the claimed packer fluids, completion fluids and workover fluids to be filtered downhole to remove precipitate because the precipitate cannot be selectively removed from the well-bore environment, but instead precipitates uncontrollably and creates difficulty. This is one reason that the claimed invention should not have precipitate – please see the last sentences in each paragraph [0019-0021]. Please also note the sentence on page 3, line 17-18, in paragraph [0012]: "In these brine systems, once precipitation occurs, it is *very difficult* to solubilize the precipitate again." (Emphasis added.)

Finally, the fact that the claims of Groups I and II may fall into different search categories is irrelevant when considering the requirement of restriction. As the Commissioner may from time to time reorganize the Art Groups, restrictions based upon this type of reasoning would allow the Commissioner to arbitrarily decide what is and is not subject to restriction. In other words, the division of art groups does not necessarily have anything to do with divisions of technology or inventions. When a particular art group gets to be too large, a logical area to divide the group is determined. This division does not necessarily define separate inventive areas, but is arbitrary. Using the Examiner's reasoning and the example above, a restriction could be required on one day because of the separation of art groups that could not have been requested the day before. The passage of time and the

arbitrary division of art groups should not enter into the restriction requirement. This is not the intent or the proper application of the restriction requirement.

Furthermore, in the instance of the claims remaining in Groups I and II, these claims are noted by the Examiner as being in the *same* Class, and *very closely related* subclasses. Thus, the Applicant respectfully submits that with respect to the remaining claims of Groups I and II the supposed "different classification" basis for distinction does not apply. Since there remain no valid reason that claims 23-40 and 43-46 are properly restricted, it is respectfully submitted that the restriction requirement should be withdrawn. Reconsideration is respectfully requested.

Rejection Under 35 U.S.C. §102(b) over Biener

The Examiner has rejected claims 23, 25-27 and 30-32 under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Pat. No. 4,943,432 to Biener.

The Examiner found that Biener teaches salt mixtures for the treatment of psoriasis. The Examiner deems Applicant's claims to be anticipated over the 12 wt% aqueous salt solution made from adding the dry salt mixture, as set forth in the Example in column 4, to water. The Examiner contends that Applicant's claimed TCT and LCTD limitations are deemed to be inherently met by this Example. Likewise, the Examiner alleges that Biener's aqueous salt solution of the Example is deemed to have a brine density that falls within Applicant's claimed brine density range.

The Applicant must respectfully traverse.

A patent claim is anticipated, and therefore invalid, only when a single prior art reference discloses each and every limitation of the claim. *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1047, 34 U.S.P.Q.2d 1565 (Fed. Cir.), cert. denied, 116 S.Ct. 516 (1995).

The Examiner's attention is respectfully directed to independent claims 23 and 32 which have been amended herein to recite that the density of the brine is at least about 11 lbs/gal. Support for this recitation is found on page 4, lines 8-9, paragraph [0015], and thus does not constitute an improper insertion of new matter.

The maximum solids concentration taught by Biener for his compositions is 34 wt%, which is just under 9.9 lbs/gal density. Thus, it is respectfully submitted that because

Biener does not disclose each and every limitation of the claims, as amended, the instant rejection is overcome.

Biener is directed to salt mixture compositions for the treatment of psoriasis and other skin diseases that are composed primarily of a mixture of magnesium halide, with mixed alkali and alkaline earth metal salts (Abstract). A particular advantageous use consists of applying the salt solution in gel instead of fluid form (column 4, lines 4-5). There is no teaching whatsoever in Biener that his salt mixtures have utility or compositions suitable in brine fluids useful for hydrocarbon recovery.

In contrast, the instant invention is directed to high-density brine fluids useful in recovering hydrocarbons (Field of the Invention). The Examiner's attention is respectfully directed to independent composition claims 23 (and claims dependent thereon) and 32 where all the claims require that the brine is selected from the group consisting of packer fluids, completion fluids and workover fluids, and that there is at least one water soluble source of zinc cations. That the composition claims are directed to high-density brine fluids useful in hydrocarbon recovery is further clarified by the fact that the true crystallization temperature (TCT) and the last crystal to dissolve (LCTD) values are specified for the claimed compositions for the cases where two salts are used and where three salts are used. Biener does not mention or suggest these parameters or that his composition meets these specifications. Composition claims 24 and 32 further specify that at least one non-emulsifier and at least one wetting agent are present in the compositions, which further define the compositions as high-density brines for hydrocarbon recovery. Biener does not teach or suggest the presence of these additional components. With respect to independent method claims 23 and 32, the language recites that there is at least one source of water-soluble zinc cations to form a brine with the water and that the carbonate or bicarbonate powder additive is added at a controlled rate that forms no precipitate. Biener does not disclose or hint at rates of carbonate addition or why they would be important.

Biener does not care if precipitates are formed, as evidenced by the solids concentrations up to 0.1 to 34% by weight (please see claims 2, 3, 4, 9, 12 and elsewhere), and the fact that the solids can be suspended in a preferred, gel form (please column 4, lines 4-26).

In summary, it is respectfully submitted that Biener does not disclose each and every limitation of the claims, particularly (1) the introduction of the additive as a powder at a controlled rate to avoid precipitation, (2) the introduction of an additive to increase pH without precipitation, (3) the fact that the brine fluid is a packer fluid, a completion fluid, or a workover fluid, and (4) the specification of a specific range for TCT and LCTD. For these reasons alone, the instant rejection must fall.

It is further noted again that in Biener carbonates are added as buffering agents, since there is *no* indication that the pH of the mixtures therein has changed as a result of their addition. In contrast, in the instant compositions and methods the pH increases, indicating that the carbonates are not acting as buffers, but rather as reactants. Indeed, the Applicant would respectfully submit that the differences between Biener and the claimed invention are so great that citing Biener against the instant claims would be to cite non-analogous art against the claims.

It is respectfully submitted that because each and every limitation of the claims is not taught by the reference, the subject 35 U.S.C. §102(b) rejection is avoided. Reconsideration of the claims is respectfully requested.

Rejection Under 35 U.S.C. §103(a) over Biener

The Examiner rejected claims 24 and 28-29 under 35 U.S.C. §103(a) as allegedly unpatentable over Biener for reasons of obviousness.

Besides the description of Biener given above, the Examiner admitted that Biener differs from the Applicant's claimed invention in that there is no direct teaching (i.e. by way of example) to aqueous brine fluids that have Applicant's specifically claimed additive to water-soluble cation mole ratio and weight percentage range. The Examiner also admits that there is no direct teaching (i.e. by way of example) to an aqueous salt mixture that actually contains a non-emulsifier and at least one wetting agent.

Nevertheless, the Examiner contends that it would have been obvious to one having ordinary skill in the art to use the broad disclosure of Biener as motivation to make aqueous brine solutions that meet Applicant's specifically claimed additive to water-soluble cation mole ratio and weight percentage range, since Applicant's claimed subject matter allegedly falls within the disclosed subject matter of Biener. The Examiner contends

that likewise it would have been obvious to use Biener's disclosure of col. 3, lines 38-45 and column 4, lines 4-26 as motivation to add additional components such as non-emulsifiers and at least one wetting agent to the aqueous salt solution since both said components are disclosed as optional additional components.

The Applicant must respectfully traverse.

Biener is directed to salt mixture compositions for the treatment of psoriasis and other skin diseases that are composed primarily of a mixture of magnesium halide, with mixed alkali and alkaline earth metal salts (Abstract). A particular advantageous use consists of applying the salt solution in gel instead of fluid form (column 4, lines 4-5). There is no teaching whatsoever in Biener that his salt mixtures have utility or compositions suitable in brine fluids useful for hydrocarbon recovery, much less as the recited packer fluids, completion fluids, or workover fluids. Furthermore, not only is there no direct teaching in Biener for the addition of a non-emulsifier or at least one wetting agent, there additionally is no *indirect* teaching, and no hint or suggestion to add such components to his compositions. All that the portions in columns 3 and 4 that the Examiner refers to are "other known substances for skin treatment"; the specific components mentioned are not non-emulsifiers or wetting agents, nor does the Examiner give any teaching or reasoning why it would even occur to one having *ordinary* skill in the art to include these two components in Biener's psoriasis compositions.

Further as discussed above, the independent claim 23 upon which these rejected claims depend has been amended to require that the density of the brine is at least about 11 lb/gal. At most, the 34 wt% solids concentration brines of Biener are just under 9.9 lb/gal. Applicant respectfully submits that there is no teaching in Biener to produce or suggest higher density brines. Because Biener does not teach or suggest the claimed high density brines, as amended, it is respectfully submitted that the instant claims, as amended, are not obvious therefrom.

That the composition claims are directed to high-density brine fluids useful in hydrocarbon recovery is further clarified by the fact that the true crystallization temperature (TCT) and the last crystal to dissolve (LCTD) values are specified for the claimed compositions for the cases where two salts are used and where three salts are used. Biener

does not mention or suggest these parameters. The Examiner assumes, without offering any support, that the specified TCT and LCTD ranges are met by Biener's psoriasis treatment compositions. The Board of Patent Appeals and Interferences reversed an examiner's rejection that an invention is *deemed* obvious relative to advances in technology without a specific reference, saying "The examiner should be aware that 'deeming' does not discharge him from the burden of providing the *requisite factual basis* and establishing the *requisite motivation* to support a conclusion of obviousness." *Ex parte Stern*, 13 U.S.P.Q.2d 1379, 1381 (B.A.P.I. 1989) (emphasis added). Applicant respectfully submits that here there is no requisite factual basis for "deeming" that Biener's compositions inherently meet the recited TCT and LCTD limitations, nor is there any factual basis for merely assuming that there is motivation to add the additional required components of a non-emulsifier or wetting agent. There is not provided within the reference the requisite motivation for such changes, nor for an increase in density of the composition.

It is respectfully submitted that a *prima facie* obviousness rejection has not been made for all of these various reasons stated. Reconsideration is respectfully requested.

Rejection Under 35 U.S.C. §103(a) EP 0 845 520 A1

The Examiner has rejected claims 23-32 under 35 U.S.C. §103(a) as allegedly being unpatentable over EP 0 845 520 A1 for reasons of obviousness.

The Examiner found that EP 0 845 520 A1 teaches stabilized aqueous brines containing soluble zinc salts and bridging salts such as calcium carbonate and magnesium carbonate mixtures, referring to the Abstract, and page 5, lines 13-16. The Examiner contends that Applicant's TCT and LCTD limitations are "deemed to be met by the Examples of EP since they are so broad." Likewise, the Examiner "deems" that EP 0 845 520 A1's aqueous salt solution of the Examples have a brine density that falls within Applicant's claimed brine density range.

The Examiner admits that EP 0 845 520 A1 differs from Applicant's claimed invention in that there is no direct teaching (i.e. an example) to an aqueous brine that actually contains magnesium carbonate. Thus, the Examiner alleges that it would have been obvious to one having ordinary skill in the art to use the EP 0 845 520 A1 to add calcium carbonate and magnesium carbonate mixtures as effective bridging agents as moti-

vation to add such bridging agents to the taught aqueous zinc containing brine compositions.

Yet again, the Applicant must respectfully traverse.

The Examiner's attention is respectfully directed to the amendments to claims 23 and 32 herein where they have been amended to explicitly recite that the composition has "an absence of precipitate". It is respectfully submitted that there is ample support in the application as filed for this language since one of the main goals of the invention is to avoid a precipitate. The Examiner's attention is respectfully directed to page 3, line 5 of paragraph [0011] and many other places where support is seen to show that this language does not constitute an improper insertion of new matter.

It is respectfully submitted that EP 0 845 520 A1 does not teach, suggest or hint at compositions without precipitates, as recited. In fact, EP 0 845 520 A1, like Mondshine, teach the *opposite*, that the carbonate bridging agents are supposed to be *insoluble* in the brines described in that publication, and hence is essentially a precipitate or solid – which is what bridging agents are. This is shown by the very passage to which the Examiner refers, page 5, lines 13-16, and then also 11-12 and 17-18:

> *The bridging agent must not be appreciably soluble in the zinc containing brine* used to prepare the fluid.
>
> Representative acid soluble bridging agents include calcium carbonate, dolomite (calcium/magnesium carbonate), iron carbonate, and other carbonates, as well as water insoluble metal oxides or hydroxides. Representative water soluble salts include sodium chloride, potassium chloride, calcium chloride, sodium formate, potassium formate, cesium formate, sodium bromide, potassium bromide, calcium bromide, sodium acetate, potassium acetate, and the like.
>
> When the bridging agent is water soluble, it is preferred that the brine be *saturated* with respect to the bridging agent, or at least *substantially saturated such that less than 10% by weight of the bridging agent is dissolved in the brine.* (Emphasis added.)

In contrast with the instant invention, these compounds *must* be soluble in the zinc containing brine to avoid precipitation therein. The Examiner's attention is respectfully directed to the requirement for "brine-soluble additive" in the claims. Thus, EP 0 845 520 A1 teaches saturated brines in which the bridging agent only partially soluble so that the

water soluble salts remain *insoluble* to perform their function as bridging agents. The compounds used as bridging agents are the same ones that precipitate out undesirably if the operator is not careful when adding the brine-soluble additives of the invention. The difference is that bridging agents are typically solid, sized salts of a particular, designed size distribution to function effectively to bridge an opening, typically a pore throat (please see the paragraph bridging pages 4-5 of EP 0 845 520 A1, pun intended), whereas precipitates have no designed or intentional size, but simply fall out of solution. EP 0 845 520 A1 uses saturated brines to keep the water soluble bridging agents *out of* solution and does not mind if precipitation of these same salts occurs, and in fact wants to operate in the realm where precipitation is likely to occur, *i.e.* saturation. In contrast, the instant claims require the additives to be brine-soluble and require the brine fluid to have no precipitate and, as noted below, not saturated.

The Applicant thus respectfully submits that EP 0 845 520 A1 (and Mondshine) is irrelevant to the claimed invention and in particular *teaches away from it*. EP 0 845 520 A1 is exclusively concerned with saturated brines in which water soluble salts exist as bridging agents. In contrast, as recited in the independent claims herein, the Applicant's additives are *brine-soluble in the absence of precipitates*. The brines with which this invention is concerned are brines so saturated as to force the bridging agents to stay out of solution. The claims now explicitly recite that no precipitates are present.

The EP 0 845 520 A1 inventors clearly do not want too much of the bridging agent to be dissolved in the brine, that is, they want most of it to be insoluble or essentially a solid that while not technically a precipitate is nevertheless present as an undissolved solid. It is thus respectfully submitted that EP 0 845 520 A1 teaches no closer to the claimed invention than Mondshine, which is discussed *infra*.

Additionally, the Examiner's attention is respectfully directed to the fact that EP 0 845 520 A1 only and clearly teaches that saturated brines are preferred therein; please see the excerpt quoted above from page 5, lines 11-18. The reference does not teach or suggest that less than saturated brines would have any particular advantage, and does not teach or suggest less than saturated brines at all. The Examiner's attention is further respectfully directed to the fact that independent claims 23 and 32 herein have been amended to recite that the brine is not a saturated brine. Support for this language is found

in the application as filed, in the Preliminary Amendment filed with the application on December 2, 2003, the last sentence of paragraph [0010], and thus does not constitute an improper insertion of new matter.

Furthermore, EP 0 845 520 A1 does not disclose (or even hint) at what would be acceptable ranges for the TCT and LCTD values recited in the claims. The Examiner "deems" these limitations to be met, however as previously established above, the Board of Patent Appeals and Interferences rejected an examiner's rejection that an invention is *deemed* obvious relative to advances in technology without a specific reference, saying "The examiner should be aware that 'deeming' does not discharge him from the burden of providing the requisite factual basis and establishing the requisite motivation to support a conclusion of obviousness." *Ex parte Stern, id.* Applicant respectfully submits that here there is no requisite factual basis for "deeming" that the compositions of EP 0 845 520 A1 meet these requirements, nor a basis for establishing why one having ordinary skill in the art would be motivated to change the EP 0 845 520 A1 process to one where the brine-soluble additive (the bridging agents therein) are appreciably soluble in the zinc-containing brine used to prepare the fluid (that is, completely contradictory to page 5, lines 11-12 of the reference).

Additionally, the EP 0 845 520 A1 reference does not suggest or hint at the inclusion of at least one non-emulsifier and at least one wetting agent in high-density brine fluids as recited in and required by claims 24 and 32 herein.

Thus, the Examiner has not established a *prima facie* case of obviousness under 35 U.S.C. §103 for the subject claims from the reference. Reconsideration is respectfully requested.

Rejection Under 35 U.S.C. §103(a) over Giddy in view of Mondshine

The Examiner in the final rejection in the parent application rejected claims 23-32 under 35 U.S.C. §103(a) as allegedly obvious over GB 799,192 to Giddy in view of U.S. Pat. No. 4,175,042 to Mondshine.

The Examiner found that Giddy discloses corrosion resistant aqueous brines that comprise water soluble salts, such as those salts that have a cation selected from zinc, magnesium, etc. and an anion selected from chlorides, bromides, etc. The said corrosion

resistant brines were seen by the Examiner to comprise a corrosion inhibiting additive, such as sodium carbonate. The Examiner contends that Applicant's claimed TCT and LCTD limitations are "deemed" to be met by the Examples of Giddy since they are so broad. Likewise, the Examiner alleges that Giddy's aqueous salt solutions of the Examples are "deemed" to have a brine density that falls within Applicant's claimed brine density range. The Examiner admitted that Giddy differs from Applicant's claimed invention in the following ways: **1)** there is no direct teaching (i.e. by way of an example) to an aqueous brine that uses sodium carbonate as the corrosion inhibiting agent, **2)** there is no direct teaching (i.e. by way of an example) to aqueous brine fluids that have Applicant's specifically recited claimed additive to water-soluble cation mole ratio and weight percentage range, **3)** there is no direct disclosure to Applicant's claimed additive powder size range.

The Examiner contends that Mondshine teaches high density brines that have corrosion reducing agents (called bridging agents) such as sodium carbonate or sodium bicarbonate having a particle size of about 5 microns to about 800 microns, added thereto (referring to the Abstract and col. 3, line 64 to col. 4, line 48). The Examiner finds that these brines function as well completion and work over fluids.

The Examiner alleges that it would have been obvious to one having ordinary skill in the art to use the disclosure of Giddy as motivation to make aqueous brine solutions that use sodium carbonate as the corrosion-inhibiting component, since sodium carbonate is directly suggested by the patent for this purpose.

The Examiner also alleged that it would have been obvious to one having ordinary skill in the art to use the disclosure of Giddy as motivation to make aqueous brine solutions that meet Applicant's specifically claimed additive to water-soluble cation mole ratio and weight percentage range, since Applicant's claimed subject matter is contended to fall within the subject matter of Giddy.

The Examiner further supposes that it would have been obvious to one having ordinary skill in the art to use the teaching of Mondshine to the use of sodium carbonate or sodium bicarbonate particles having an effective particle size range of about 5 microns to about 800 microns as motivation to use sodium carbonate or sodium bicarbonate particles having said size range in the aqueous brines taught by Giddy.

Once again, the Applicant must respectfully traverse.

The Applicant again respectfully notes that independent claims 23 and 32 herein have been amended to recite that the brine comprises an absence of a precipitate.

Giddy, in particular, does not teach, hint or suggest that carbonate additives may be added to brines in such a way that *forms no precipitate*. In fact, precious little is present in Giddy about carbonates, except that sodium carbonate is merely mentioned near the end of a list of corrosion inhibiting substances in the portion of Giddy at page 2, lines 20-50 cited by the Examiner.

Giddy teaches nothing about high-density brine fluids that are completion fluids, packer fluids, or workover fluids. Giddy also teaches nothing about the suitable TCT and LCTD ranges for such fluids. The Examiner alleges that Giddy's compositions are "deemed" to meet Applicant's claimed TCT and LCTD limitations, but provides no factual basis for such a conclusory statement, and no motivation for why anyone of ordinary skill in the art would change the Giddy compositions to comply with the required and recited TCT and LCTD ranges. *Ex parte Stern, id.* Thus, the Examiner's unfounded contention in this regard cannot stand.

It is further respectfully submitted that Mondshine is of no help in supplying the deficiencies of Giddy. In fact, as repeatedly established in the parent case, Mondshine explicitly teaches that his carbonate bridging agents are *insoluble* in his brines in the particle sizes taught. Mondshine is exclusively focused on saturated brines. As established above with respect to EP 0 845 520 A1, Mondshine is also inappropriately cited herein because it teaches away from the invention.

A reference which leads one of ordinary skill in the art away from the claimed invention cannot render it unpatentably obvious. *Dow Chemical Co. v. American Cyanamid Co.* 816 F.2d 617, 2 U.S.P.Q.2d 1350 (Fed. Cir. 1987); *In re Grasseli, et al.*, 713 F.2d 731, 218 U.S.P.Q. 269 (Fed. Cir. 1983); *In re Dow Chemical Co.* 837 F.2d 469, 5 U.S.P.Q.2d 1529 (Fed. Cir. 1988).

The Examiner's attention is further respectfully directed to *In re Haruna, et al.*, 249 F.3d 1327, 1335; 58 U.S.P.Q. 2d 1517 (Fed. Cir. 2001):

> "A prima facie case of obviousness can be rebutted if the applicant ... can show 'that the art in any material respect taught away' from the claimed

invention." *In re Geisler*, 116 F.3d 1465, 1469, 43 U.S.P.Q.2d (BNA) 1362, 1365 (Fed. Cir. 1997) (quoting *In re Malagari*, 499 F.2d 1297, 1303, 182 U.S.P.Q. (BNA) 549, 533 (CCPA 1974)). "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, ... would be led in a direction divergent from the path that was taken by the applicant." *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360, 52 U.S.P.Q.2d (BNA) 1294, 1298 (Fed. Cir. 1999).

Mondshine teaches in column 4, lines 11-33:

> The *saturated* brine solution can be formed by dissolving any suitable salt or mixture of salts in water to form the saturated brine solution. Some salts that are generally available and which may be used include potassium chloride, sodium chloride, calcium chloride, sodium sulfate, sodium carbonate, sodium bicarbonate, calcium bromide and potassium carbonate. When the invention is employed in well bores which have increased temperatures, the sized salt which is employed as the bridging agent in the completion fluid is added in a sufficient quantity *so that even though some of it may dissolve at higher temperatures, the amount dissolved will not materially affect the action of the sized salt particles suspended in the saturated brine solution in functioning as a water soluble bridging agent for temporarily plugging the producing formation pores during the completion and work over procedure.*
>
> *Any water soluble salt which is insoluble in the saturated brine solution may be employed.* Some which are generally available include potassium chloride, sodium chloride, calcium chloride, sodium sulfate, sodium carbonate, sodium bicarbonate, calcium bromide and potassium carbonate. (All emphasis added.)

It is noted that the same salts used to form the brine are those used as the bridging agents (compare the lists from the two paragraphs quoted above). Thus, similarly to the EP 0 845 520 A1 teachings, Mondshine only teaches saturated salt solutions so that the bridging agents are insoluble in the saturated brine solution. However, in contrast, independent claims 23 and 32 herein require that the additive is *brine-soluble*. Since Mondshine explicitly teaches a composition where the salts are insoluble, as quoted above, this reference directly and explicitly teaches away from the claimed invention and is thus inappropriately cited and relied upon, it is respectfully submitted.

In contrast, as recited in the independent claims herein, the applicant's additives are brine-soluble. The brines with which this invention is concerned are not saturated brines. As previously noted, the independent claims 23 and 32 have been amended herein to recite that the brines are not saturated brines, which further distinguishes the claimed

invention from Mondshine. It is respectfully submitted that one having ordinary skill in the art would not look to Mondshine for any help or instruction on how to dissolve carbonate additives into brine to raise their pH without precipitation, as required by the claims. Mondshine does not teach or suggest any desirability for using less than saturated brines.

It is further respectfully submitted that the Examiner has identified *no motivation* for combining these two references. Indeed, the problem of precipitation is not even identified in either reference, so one having ordinary skill in the art would have no reason to use the bridging agents of Mondshine in Giddy since no reason is provided or supposed to improve on Giddy – unless the Examiner is using the Applicant's claims improperly as a blueprint to pick and choose from various references only those parts of the references that might have utility in making an obviousness rejection.

Further, it is respectfully submitted that the Examiner has identified no reason why one having *ordinary* skill in the art of fluids used in metal working and cutting processes of Giddy would be motivated to include water soluble salts (from Mondshine) that are *insoluble* in the metal working and cutting fluids of Giddy for any reason, much less to increase the pH of the fluids without precipitation – particularly when the precipitates are those same *insoluble* water soluble salts.

It is respectfully submitted that the Examiner has failed to establish a *prima facie* 35 U.S.C. §103 rejection of the claims based on these two references. Furthermore, it is respectfully submitted that Mondshine is inappropriately cited herein because it relates to and only teaches water soluble salts that are *insoluble* in the compositions of interest. Reconsideration is respectfully requested.

Rejection Under 35 U.S.C. §103(a) over Romenesko, et al. in view of Mondshine

The Examiner has rejected claims 23-32 under 35 U.S.C. §103(a) as being unpatentable over Romenesko et al. U.S. Pat. No. 4,381,241 in view of Mondshine (for claim 30 only) for reasons of obviousness.

The Examiner finds that Romenesko et al. teaches invert emulsions for well-drilling comprising: A) a discontinuous aqueous brine phase, B) a liquid hydrocarbon as a continuous phase and C) polydiorganosiloxane, referring to the abstract and col. 2, lines

10-45. The aqueous brine that is subsequently added to the other components to make said invert emulsion comprises salts that are typically used in the well-drilling art such as sodium chloride, sodium carbonate, potassium chloride, potassium carbonate, calcium chloride, calcium bromide, zinc chloride, zinc bromide and mixtures thereof, noting col. 3, lines 26-68 and the examples. Again, the Examiner "deems" that Applicant's claimed TCT and LCTD limitations are met by Romenesko et al.'s Examples since they are so broad. Likewise, the Examiner contends that Romenesko et al.'s aqueous salt solutions are "deemed" to have a brine density that falls within Applicant's claimed brine density range.

The Examiner admits that Romenesko et al. differs from Applicant's claimed invention in the following ways: **1)** there is no direct teaching (i.e. by way of an example) to an aqueous bone [brine] composition that actually comprises a zinc salt in combination with sodium or potassium carbonate, **2)** there is no direct teaching (i.e. by way of an example) to aqueous brine fluids that have Applicant's specifically claimed additive to water-soluble cation mole ratio and weight percentage range, and **3)** there is no direct disclosure to applicant's claimed additive powder size range.

The Examiner notes that Mondshine was previously described.

The Examiner further contends that it would have been obvious to one having ordinary skill in the art to use the broad disclosure of Romenesko et al. as motivation to make aqueous brine solutions that comprised a zinc salt with sodium carbonate or potassium carbonate since the zinc salt is a preferred salt and the sodium carbonate and/or potassium carbonate are both directly suggested by the patent to be effective when used in mixtures with other salts such as zinc bromide and/or zinc chloride.

The Examiner additionally alleges that it would have been obvious to one having ordinary skill in the art to use the broad disclosure of Romenesko et al. as motivation to make aqueous brine solutions that meet Applicant's specifically claimed additive to water-soluble cation mole ratio and weight percentage range, since Applicant's claimed subject matter falls within the broad concentration of Romenesko et al.

The Examiner also contends that it would have been obvious to one having ordinary skill in the art to use the teaching of Mondshine to the use of sodium carbonate or sodium bicarbonate particles having an effective particle size range of about 5 microns

to about 800 microns as motivation to use sodium carbonate or sodium bicarbonate particles having said size range in the aqueous brines taught by Giddy [Romenesko et al.?] (claim 30).

The Applicant must again respectfully traverse.

As with EP 0 845 520 A1 and Mondshine, Romenesko et al. is focused on and prefers saturated brines. The Examiner's attention is respectfully directed to column 3, lines 30-31: "Preferably the brine is a *saturated* aqueous solution of the salt at 20°C." and lines 59-62: "A preferred brine in the emulsion compositions of this invention comprises water *saturated* with a mixture of calcium bromide and zinc bromide and having a density of about 20 pounds per gallon at 20°C." and also column 6, lines 43-47: "A *highly preferred* emulsion composition of this invention for preventing blow-out thus comprises from 40 to 60 parts by volume of a *saturated* aqueous solution of $CaBr_2$ and $ZnBr_2$ having a density of about 20 pounds per gallon." (Emphasis added.)

As previously noted, the claims have been amended herein to recite that the brine is not saturated. The Applicant respectfully submits that further Romenesko et al. does not teach or suggest any advantage to using a less than saturated brine as claimed herein, thus it is respectfully submitted that the invention claimed herein, as amended, is not taught or suggested by Romenesko et al. alone, or in combination with Mondshine, which only and clearly teach the advantages of saturated brines, and thus teach away from the invention as claimed. Thus, the claims herein are not obvious from the references taken singly or together. The claims specifically recite that the brine is not saturated, and that no precipitate is present or formed.

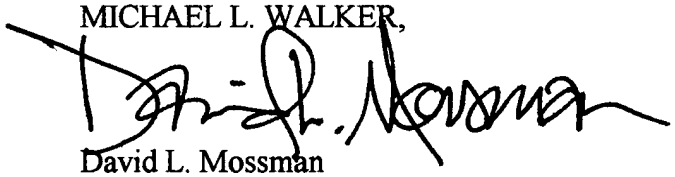
It is particularly inappropriate to assert Romenesko et al. against claims 24 and 32 herein since these claims require the brine to have at least one non-emulsifier. Such non-emulsifier would literally, physically, and chemically destroy Romenesko et al. for its stated purpose, namely an invert emulsion.

Further, it is respectfully submitted that the Examiner's mere "deeming" the Romenesko et al. brines to meet the required TCT and LCTD ranges now recited in the claims does not provide a proper factual basis for an obviousness rejection; *Ex parte Stern, id.*

For all of these reasons, it is respectfully submitted that the Examiner has not made a *prima facie* obviousness rejection based on these references. Reconsideration is respectfully requested.

It is respectfully submitted that the amendments and arguments presented above place the claims in condition for allowance. Reconsideration and allowance of the claims are respectfully requested. The Examiner is respectfully reminded of his duty to indicate allowable subject matter. The Examiner is invited to call the Applicants' attorney at the number below for any reason, especially any reason that may help advance the prosecution.

Respectfully submitted,
MICHAEL L. WALKER,



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